

VI. Existing Conditions

A. Context.

Introduction.

The purpose of this section is to provide an overview of the existing conditions within, and surrounding, the HAMP study area. This, in essence, provides the context and the constraints for the plan area.

The discussion begins with population projections for the HAMP area, based on the Pima Association of Governments (PAG) projections. These projections, which indicate substantial population growth for the HAMP area, are part of the PAG transportation system modeling process, and are agreed upon by all jurisdictions within the PAG planning area, which includes metropolitan Eastern Pima County.

The HAMP area, north of Irvington Road, a one mile wide corridor on either side of Houghton Road, is technically part of the HAMP. This area, however, will be addressed in a separate planning document. A synopsis of the land uses in this northern corridor is incorporated here for continuity.

Next, is a rundown of the many studies which are currently under way in and around the HAMP area. The discussion then focuses on land uses surrounding the study area. The remaining subsections cover the natural environment and the built environment. Together, these final sections reveal environmental constraints to development, opportunities for preserving and incorporating environmental features into the developed landscape, and constraints and opportunities provided by the human-related activities within the HAMP planning area.

1. Demographics and Population Projections

The Tucson metropolitan area has been experiencing rates of growth exceeding two (2) percent annually for decades. Though the pace is expected to slow in the second half of this decade, the projected annual rate of growth through 2030 is approximately one and one half (1½) percent. The Pima Association of Governments (PAG) is currently projecting that the population of eastern Pima County will increase by over eighty percent between the years 2000 and 2030. During this time period, PAG projects that employment, or the number of jobs in eastern Pima County, will double.

Projecting the future population for a subarea can be difficult. The PAG population projections are based on the Traffic Analysis Zones (TAZ), which are components of the metropolitan area transportation planning model. These projections are used here because they are generally accepted by all jurisdictions in the metropolitan area. A drawback of the TAZ approach is that the collective TAZ boundaries do not match the

HAMP boundaries. Therefore, the Population Analysis Area extends beyond the HAMP, to include portions of Rita Ranch and Rocking K. See **Figure 1** Population Analysis Area. For the purpose of creating a context for the planning in the HAMP, however, the TAZ approach is sufficient.

In the year 2000, there were an estimated 2,700 residents in the Population Analysis Area. PAG's 2030 projection indicates this population in this area will increase to just over 100,000. This constitutes roughly fifteen percent of all of the growth anticipated for eastern Pima County. This projection is consistent with the HAMP area's market share of new construction permits over the last five years. PAG projects that nearly seven percent of the additional employment (22,873 jobs) attracted to eastern Pima County by the year 2030 will occur in the HAMP area.

2. Current Planning Projects in the HAMP Region.

Because the HAMP area is projected to develop dramatically between 2003 and 2030, there are several important studies currently underway in the region to ascertain the impacts of the growth on public facilities, and to determine future facility capacity needs. These studies have been undertaken by PAG, Arizona Department of Transportation (ADOT), Pima County Wastewater, and the Arizona Department of Commerce. The diversity of these entities and the these studies reflects the broader concern for proper planning in this region. The studies are summarized below. **Figure 2** displays the study areas for these projects.

ADOT Houghton Road Corridor Study: The Houghton Road Corridor (HRC) study is comprised of four segments: (1) Houghton Road, from Tanque Verde Road, south to Golf Links Road; (2) Houghton Road, Golf Links Road, south to Interstate 10; (3) Houghton Road, Interstate 10, south to Sahuarita Road; and, (4) The Houghton Road/ Golf links Road/Alvernon Way/ Interstate 10 loop.

Houghton Road is a significant, uninterrupted east valley roadway. Over the length of Houghton Road, segments of the roadway fall under the jurisdiction of the City of Tucson or Pima County. Houghton Road is primarily a two-lane arterial roadway which bi-sects the HAMP study area. It is designated as a Scenic Corridor by the City of Tucson.

The purpose of the Houghton Road Corridor study is to ascertain the facility and right-of-way needs for Houghton Road 20 to 30 years into the future. The study is limited to determining what the ultimate cross section(s) will be, based on projected future conditions.

Project Summary

Estimated Project Time–Line: September, 2002 through March, 2004

Lead Agency: Arizona Department of Transportation

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Houghton Area Master Plan

November 19, 2003

Consultant: Kimley Horn and Associates

Note: The HRC should be completed prior to M/C adoption of the HAMP. This section will have to be amended to reflect the project completion and to state the findings/recommendations.

Southeast Area Arterial Study: This study will identify constraints and analyze other considerations in the area located generally south from the Tucson International Airport to Sahuarita Road, and between Interstate 19 on the west and Sonoita Highway on the east.

The objective of the study is to determine future roadway needs and travel demands for the study area. The study also includes the review of alternative alignments of an interstate loop to connect Interstate 19 with Interstate 10, through the study area. The scope of work includes: assessing growth forecasts and associated transportation needs; evaluating physical and environmental features, and other conditions which may shape or influence transportation and infrastructure planning; identifying adequate and convenient access to the City of Tucson Puerto Nuevo Distribution Center; preparing recommendations regarding the development of the future arterial system; and, completing a report of the findings and recommendations.

Project Summary

Estimated Project Time-Line: March, 2003 through September, 2004

Lead Agency: Pima Association of Governments

Consultant: Kimley-Horn and Associates

Interstate 10 and Interstate 19 Corridor Studies: The I-10 study segment is Park Avenue to the Cochise County line, and the I-19 segment extends from the junction at I-10, south to the Santa Cruz County line. The studies will produce corridor reports which will provide recommendations for future improvements. Future programming of State highway funds is dependent on the recommendations of corridor studies.

The Corridor Reports will document existing conditions and will identify future facility needs for the year 2030. Infrastructure conditions, traffic operations and environmental issues will be analyzed and used to support and justify future corridor improvements. The report will include conceptual design, construction cost estimates and sequencing for corridor improvements such as: future interchanges, access control, noise abatement and drainage management. Specific recommendations for currently warranted safety and capacity projects will also be included.

Project Summary

Estimated Project Time-Line: August, 2003 through December, 2004

Lead Agency: Arizona Department of Transportation

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Houghton Area Master Plan

November 19, 2003

Consultant: URS Greiner Woodward Clyde

Joint Land Use Study (JLUSE): The JLUSE Study of the Davis Monthan Air Force Base (DM) environs is a subset of the Arizona Military Airports Regional Compatibility Project, which addresses growth and development issues in and around the five military installations in the state of Arizona.

The purpose of the study is to address land use conflicts that may impact the ability of DM to conduct its current mission, as well as future missions. The study will also result in the development of mitigation strategies for current conflicts, and the establishment of land use regulations to prevent future conflicts.

Stakeholders from across the community are involved in the project. Such stakeholders include representatives of the City of Tucson, Pima County, Davis Monthan AFB, the Arizona State Land Department, area home owners, and other private property owners and interested parties.

Project Summary

Estimated Project Time-Line: January, 2003 through March, 2004

Lead Agency: Arizona Department of Commerce

Consultant: Parsons, Inc

Endangered Species Act Compliance: The City of Tucson intends to comply with the Endangered Species Act by establishing a Habitat Conservation Plan (HCP) as part of a Section 10 Incidental Take Permit Application. The project will include advanced urban planning and conservation planning to create an appropriate urban environment / natural environment interface in the Southlands, and will be designed to allow the construction of planned future water resource development projects on the Avra Valley land holdings. The Santa Cruz River Corridor within the Tucson city limits will be studied to determine the Endangered Species Act implications of potential river corridor restoration projects. The HCP will also identify opportunities for coordinated, multi-jurisdictional conservation measures.

Project Summary

Estimated Project Time-Line: November, 2003 through June, 2005 (Phase I)

October, 2005 through September, 2006 (Est. Phase II)

Lead Agency: City of Tucson Comprehensive Planning Task Force

Consultant: To be Determined

3. Surrounding Uses.

- a. Adjacent Development.

The HAMP area is surrounded by a number of significant uses and developments. The Davis Monthan Air Force Base Poorman Gunnery Range is adjacent to the HAMP boundary on the west, north of Valencia Road. Rita Ranch, a master-planned community containing approximately 4420 dwellings, housing 9800 people, is also west of the HAMP boundary, south of Valencia Road. Rita Ranch is a predominantly single family residential development, although it includes one retail shopping center on Valencia Road, and one on Houghton Road.

South of Rita Ranch is the University of Arizona Science and Technology Park, which consists of light industrial, commercial, and academic/institutional uses. The University of Arizona Science and Technology Park is a part of a cluster of commercial and industrial uses within the I-10 and Southern Pacific Railroad corridor.

Two prominent developments exist east of the HAMP area, across the Pantano Wash, in unincorporated Pima County. Vail Valley Ranch (Rancho Del Lago) is located southeast of the HAMP area, on either side of the Pantano Wash. This specific plan includes residential, recreation, and commercial uses, and is in the process of being developed at this time. Rocking K is located along Old Spanish Trail, due east of the HAMP area. Like Vail Valley Ranch, Rocking K is also a specific plan. Rocking K includes residential and recreation uses, as well as a commercial or activity center on Old Spanish Trail.

b. County Comprehensive Plan Direction.

The eastern and southern boundaries of the HAMP area coincide with Tucson's city limits. Policy direction for land uses outside of the City is provided by the Pima County Comprehensive Plan. The area east of the Pantano Wash is bounded to the north by the Saguaro National Monument, to the east by the Coronado National Forest and the Colossal Cave Mountain Park, and to the south by the Cienega Creek Natural Preserve. County policy direction includes the Rocking K and Vail Valley specific plans, and additional specific policies for the remaining areas. In the Rocking K area, the Plan identifies two commercial centers along Old Spanish Trail, which also allow for high-density residential uses. Between these commercial areas, plan policy allows for medium intensity residential uses (up to 10 units per acre). Medium intensity residential uses are also allowed within the Vail Valley area. Along the Pantano Wash, and towards the National Monument and National Forest, the Plan calls for lower intensity uses.

4. Development along the Houghton Road Corridor north of Irvington Road

Though the southern portion of the Houghton Road corridor is largely undeveloped, the portion north of Irvington Road is mostly developed. Growth in the northern portion of the Houghton Road corridor has followed a grid pattern of arterial streets. More intense development, such as commercial and higher density residential, is located along, and at

the intersections of, major streets. Less intense development, such as lower density residential, is located in the neighborhoods between major streets.

a. Residential.

The majority of developed land in this area consists of both attached and detached single family residential subdivisions. Individual lot sizes vary throughout the area, though the more dense, smaller lot subdivisions tend to be west of Houghton Road. Almost fifty percent of the parcels identified as having a single-family residential use are between 8,500 square feet and 9,000 square feet in size. About twenty percent of the single-family parcels are between 4,000 square feet and 4,500 square feet in size, and another twenty percent are between 13,000 square feet and 43,560 square feet (one acre) in size. Other residential developments in the area include four condominium and townhouse subdivisions, as well as two apartment complexes.

b. Commercial.

There are four major intersections in the area with commercial activity, including Houghton Road at Broadway Boulevard, Harrison Road at Broadway Boulevard, Harrison Road at 22nd Street, and Harrison Road at Golf Links. There are also a number of recreational commercial uses, mostly horse properties, along the Pantano and Tanque Verde Washes.

c. Recreation.

Case Park is the only public park in the north Houghton Road Corridor. It is located in the neighborhood between Broadway Boulevard and 22nd Street, and Harrison Road and Houghton Road.

d. Drainage.

The northern portion of the Houghton Road Corridor includes a substantial amount of land dedicated to drainage. The Pima County Flood Control District owns much of this land, but some is owned by private homeowner's associations and is identified as common areas or open space. Some of these drainage areas have been preserved in natural states, while others are entirely engineered.

e. Vacant Land.

A significant amount of undeveloped land exists in the north Houghton Road corridor area, though it is developing quickly. There is a large concentration of vacant land at Tanque Verde Road and Houghton Road, though there are significant drainage issues

associated with these parcels. There is another large concentration of vacant land at Golf Links Road and Houghton Road, though two of the larger parcels in this area are presently in the development process. There are also relatively large parcels at Houghton Road and Golf Links Road and at Houghton Road and Broadway Boulevard that have redevelopment potential.

B. The Natural Environment

1. Drainage and Associated Riparian Habitat

There are four primary washes in the HAMP area: the Pantano, the Atterbury, the Mesquite Ranch, and the Civano (See Figure 4). There are also many unnamed washes and tributaries in the area. Associated with these washes and tributaries are two types of riparian habitats: tobosa grass-lined swales and tree-lined channels. Existing riparian habitats are shown in Figure 5.

There are three City of Tucson Code sections that regulate development in and around riparian habitats. Each of the Code sections treats the habitats somewhat differently. Floodplain Regulations, which regulate floodplains as part of the National Flood Insurance Program, state that development shall not "unnecessarily alter riparian habitat of the watercourse and adjacent bank areas" in the 100-year floodplain. The 100-year floodplain (aka regulatory floodplain) is identified as the land area inundated by overland stormwater flows generated by a storm event (over the entire watershed area) with a 1% chance of occurring in any one year (100-year storm).

Chapter 29, Article VIII, the Watercourse Amenities Safety and Habitat (WASH) Regulations state that development shall not unnecessarily alter riparian habitat/resource areas that are within 50 feet of the top-of-bank for the watercourse. If the top-of-bank for the watercourse is not defined, the 10-year floodplain shall be used as the top-of-bank.. The *Land Use Code* regulates riparian habitat through the Environmental Resource Zone overlay (ERZ), which states that development shall not unnecessarily alter riparian habitat/critical resources within the 100-year floodplain for the watercourse.

Within the HAMP area, there is a significant amount of land that is within the 100-year floodplain. Currently, only the Civano Wash and the Atterbury Wash are designated as WASH regulated watercourses, though the Mesquite Ranch Wash and various tributaries of the Civano and Atterbury washes are proposed for WASH designation. There are also a number of tributaries proposed for ERZ designation (See Figure 6). When the 100-year floodplain and proposed habitat preservation envelopes are compared (See Figure 7), it becomes clear that there are significant issues and constraints associated with both drainage and riparian habitat areas. *(Staff Note: Proposed designations identified here, in the Existing Conditions Section, are to illustrate the implications of addressing riparian habitat with the available regulatory tools. In the HAMP, itself proposed designations*

and other recommendations will be located in the Strategy for Future Development section.)

2. Significant Landforms

Though the HAMP area is relatively flat, there are two areas within HAMP that include significant slope features (**See Figure 8**). The first is a ridge on the west side of the Pantano Wash, near the Rincon Creek confluence. The second is a bluff that runs through the northern portion of the HAMP area, parallel to the Pantano Wash. These slopes are not extensive enough to fall within the purview of the Hillside Development Zone, however, they may influence development in the area.

3. Disturbed Areas (Mining and Landfills).

Between 5% and 10% of the HAMP area has been disturbed by mining operations and landfills (**See Figure 8**). Extensive sand and gravel mining has resulted in the intense disturbance of approximately 900 acres along the Pantano Wash. A number of mining operations are currently active on County, State, and privately owned land. The Irvington Landfill is the only landfill within the HAMP boundary. The 45 acre site is located on the south side of Irvington Road, between Houghton Road and Harrison Road. This landfill was operational between 1978 and 1988, and remains closed at this time. The City is conducting final closure procedures. The landfill site has the potential to be developed as a post-closure park site. Other uses in the area, such as cattle grazing, off-road vehicle use, overhead utility line construction and maintenance, and illegal dumping, have resulted varying amounts disturbance, though these impacts are less intense and distributed over a greater area.

Approximately 320 acres along the east side of the Harrison Road alignment, adjacent to the Davis Monthan Air Force Base Poorman Range, is identified as a Formerly Used Defense Site (FUDS). This FUDS originally served as a ricochet area for a small arms range located within the Poorman Range. An improvement of the range made the retention of the land unnecessary. Department of Defense control ended in 1978 when the lease expired. This parcel is owned by the State of Arizona and is currently leased for cattle grazing.

4. Wildlife.

In 2002, SWCA conducted an evaluation of biological resources for the 7,742 acres of State Trust Land within the HAMP area. This study updated a Biological Evaluation conducted in 1999 by considering additional species included in the Sonoran Desert Conservation Plan. It also evaluated potential effects of development, as well as constraints to development and mitigation opportunities.

The HAMP area is located in the Arizona Upland Subdivision of the Sonoran Desertscrub biome. In this area, the Sonoran Desertscrub vegetation type is characterized by the dominance of shrubs, with creosote bush, burrobrush, and burroweed the most abundant species. Tree species include yellow palo verde, blue palo verde, Jerusalem thorn, and velvet mesquite. Several species of cholla and prickly pear cacti are abundant. Candy barrel cactus and pinkflower hedgehog cactus are common. Saguaros are rare.

The relative dominance of the different species varies by location. The abundance of cacti and shrubs, and the disturbance of native grasses on the parcel is typical of areas that have been subjected to heavy livestock grazing over a period of many years. Xeroriparian Mixed Scrub, primarily consisting of mesquite, is the characteristic riparian vegetation found along washes in the area. Seven stock tanks were identified. One stock tank supports a small patch of Cottonwood/Willow riparian vegetation. None of the tanks have permanent water. There are no rock outcroppings so there are no known mine adits, mineshafts, or natural caves in the area.

No federally listed species are known to regularly occur or breed in the study area. However, the federally listed endangered Pima pineapple cactus (*Coryphantha scheeri robustispina*) has the potential to occur in the southern portion of the HAMP area. It is unlikely that cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) occurs within the area because there are few saguaros (*Carnegiea gigantea*) or native trees greater than six inches in diameter. The presence of special interest fish or amphibians in the stock tanks is considered extremely unlikely because of the absence of permanent water. The protection of washes present in the area would improve environmental conditions by limiting erosion and maintaining habitat and movement corridors for wildlife.

Two species listed as Wildlife of Special Concern in Arizona (WSCA) by Arizona Game and Fish Department (AGFD), desert tortoise (*Gopherus agassizi*) and California leaf-nosed bat (*Macrotis californicus*), may occur in the area. Three plants protected under the Arizona Native Plant Law (ANPL) may also occur: needle-spined pineapple cactus (*Echinomastus erectocentrus erectocentrus*), Pima Indian mallow (*Abutilon parishii*), and Tumamoc globeberry (*Tumamoca macdougallii*).

The HAMP will not be included in the City's Habitat Conservation Plan and will not include policies specifically relating to Federal or State requirements regarding protected species. Developers will be responsible for any preservation or mitigation that may be required as a result of development in the HAMP area.

5. Cultural Resources

In 1999, SWCA conducted an Archaeological Records Search that assessed 33 surveys conducted in the HAMP area, on file at the Arizona State Museum. These surveys identified 79 sites including 70 prehistoric sites, eight historic sites, and one mixed prehistoric/historic site. The prehistoric sites include lithic and sherd scatters, campsites,

roasting pits, undefined rock features, agriculture, habitations, resource exploitation and procurement, and check dams. Fourteen of the prehistoric sites are National Register-eligible, and 54 sites are potentially eligible for the National Register. Historic sites include a National Register-eligible historic train complex (Esmond Station), two railroad sites, an additional railroad site with associated historic trash scatter, two historic buildings, one historic trash scatter, and a historic Papago habitation site.

The City of Tucson's Development Standards require rezoning requests to include a statement from the Arizona State Museum, the State Historic Preservation Office, or a qualified archaeologist indicating whether the rezoning site has been field surveyed, whether there are archaeological or historical resources on or adjacent to the site, and recommendations with regard to further investigation and/or preservation. Recommendations may be implemented through conditions of rezoning.

C. The Built Environment

1. Land Ownership.

Land within the HAMP area is owned by the State of Arizona School Trust (managed by the Arizona State Land Department), Pima County, the City of Tucson, and private individuals and corporations. **Table 1** provides the breakdown of ownership, and **Figure 9** depicts the areas of ownership.

Table 1 Land Ownership in HAMP Area			
Entity	Acres	Percent of HAMP Area	Description
Arizona State Land Department	7,944	75.2%	mostly undeveloped
Pima County	222	2.1%	clustered along the Pantano Wash, near the Rincon Creek confluence; some mining
City of Tucson	546	5.2%	landfill on Irvington, large parcels on Houghton across from Civano (currently identified as a potential park/golf course), vacant parcels just south of Portland Cement quarry
Private	1,846	17.5%	mostly developed

2. Land Uses.

a. Residential.

Within the boundaries of the HAMP, only a small percentage of land is currently developed. Most of this land is dominated by single-family residential subdivisions that are either built, or in the process of being built. There are four significant residential developments along Houghton Road: the Civano Planned Area Development; the Mesquite Ranch subdivision; the Desert Willows subdivision; and a portion of Rita Ranch which is east of Houghton Road. A fifth subdivision, Saguaro Trails, is located off of Old Spanish Trail on the east side of the Pantano Wash, at the eastern most edge of the HAMP boundary. Together, these subdivisions amount to approximately 530 acres. Additionally, there are roughly 120 acres of other residential parcels, both single family residential and mobile home uses in the HAMP area. Some of these are located east of Civano, along the Pantano Wash, and some are to the south, near Old Vail Road. Combined, existing residential uses consume about six (6) percent of the land within the HAMP area.

b. Non-Residential.

A limited number of parcels contain non-residential uses. The Civano Nursery, Global Solar Energy, and the Civano community center are all associated with the Civano Planned Area Development. There are a credit union and a group home near the intersection of Rita Road and Houghton Road. Just south of Valencia Road on Houghton Road there are two storage facilities, which are identified as industrial uses, and a veterinary clinic. Two sand and gravel quarries have been identified on the Pantano Wash. One is at the Valencia Road, and the other is at Bilby Road. Combined, these non-residential uses consume less than two (2) percent of the land within the HAMP area.

c. Proposed Development.

There are a number of development proposals in the vicinity of Houghton Road and Valencia Road. Tucson Medical Center has expressed an interest in establishing a medical complex on the northeast corner of the Houghton Road and Valencia Road intersection. The southeast corner of this intersection has been rezoned to allow a retail shopping center, including a gas station and grocery store. Construction of a proposed hardware store is underway immediately south of the rezoning site. Additionally, a proposed grocery store at the intersection of Rita Road and Houghton will reinforce that area as a commercial center.

3. Zoning.

a. Existing Zoning.

All of the land within the HAMP study area is currently zoned by the City of Tucson. When the land was annexed into the city, it was given original city zoning. As

development has occurred, specific sites proposed for development were rezoned to allow higher intensity development to take place. **Table 2** provides a breakdown of the existing zoning, and a brief summary of each zone. **Figure 10** shows the existing zoning in the HAMP area.

Table 2 Existing Zoning in the HAMP		
Zone	Acres	Description of Zone
SR	3902	very low density, large lot, single-family residential development and suburban ranch uses
RX-1	1666	suburban, low density, single-family, residential development and other compatible neighborhood uses
R-1	371	urban, low density, single-family, residential development, together with schools, parks, and other public services necessary for a satisfactory urban residential environment
R-2	167	medium density, single-family and multifamily, residential development, together with schools, parks, and other public services necessary for an urban residential environment
MH-1	3714	low to medium density, residential development primarily in mobile home structures on individual lots and within mobile home parks; civic, educational, recreational, and religious uses are also permitted to provide for an urban residential environment
O-3	36	mid-rise office development and other land uses that provide reasonable compatibility with adjoining residential uses
C-1	4	low-intensity, commercial and other uses that are compatible with adjacent residential uses; residential and other related uses are permitted
C-2	12	general commercial uses that serve the community and region; residential and other related uses also permitted
I-1	61	industrial uses that do not have offensive characteristics
I-2	702	industrial uses that are generally nuisances, making them incompatible with most other land uses
OCR-2	50	high-rise development that serves the community and region, located in major activity centers
PAD	176	mixed use zone with the purpose of enabling and encouraging comprehensively planned development; may have land use regulations different from the standard zoning regulations in the Land Use Code

b. Airport Environs Zone (AEZ).

The purpose of this overlay zone is to protect the health, safety, and welfare of persons and property in the vicinity of Tucson International Airport and Davis-Monthan Air Force Base. The overlay district promotes compatibility with aircraft operations through

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the regulation of building height and density, as well as land use. A small area in the HAMP, along Old Vail Road, is within the Davis-Monthan Air Force Base Approach/Departure Corridor. **Figure 11** displays the AEZ. Within the Approach/Departure Corridor, the AEZ prohibits residential, educational, religious, and civic uses, as well as some medical uses.

The district addresses the dangers of potential aircraft accidents through restrictions on the congregation of large numbers of people, high concentrations of people, and concentrations of people who are unable to respond to emergency situations, such as children, the elderly, the handicapped, and persons undergoing medical treatment. The district increases the protection of persons exposed to high levels of aircraft noise by requiring acoustical treatment in buildings located within these areas and regulating those uses which are sensitive to such noise. The district also prohibits uses that create potential hazards to the safe approach and departure of aircraft.

4. Circulation

The *Major Streets and Routes Plan (MS&R)* identifies street classifications and widths of public right-of-way widths for major arterial and collector roadways within the HAMP area. A 1999 amendment to the *MS&R* adopted a street network for much of the undeveloped state land in anticipation of future development in the region and to coordinate future roadway alignments with a major street system in unincorporated Pima County. See **Figure 12**.

The *MS&R* designates Houghton Road, Civano Boulevard, Bilby Road, Poorman/Vail Vista Road, Valencia Road, Rita Road, Cienega Road and Melpomene Road as arterial streets. Their right-of-way width vary from 90' to 200'. Houghton Road, future Poorman/Vail Vista Road, Valencia Road, and future Cienega Road are also designated as Scenic Routes in the *MS&R*. The alignments of the roadways are shown in their approximate configuration with their actual location to be determined through further study. Specific design concept reports have been conducted and approved for the alignment of Valencia Road – Houghton to Old Spanish Trail and Cienega Road – Houghton to the east city limits.

When the 1999 amendment was adopted additional policies were also added to the *MS&R* which require the street network in the southeast sector to be sensitive to the topography and natural environment. Wash crossings are to be limited for both the roadways and for access to the roadways from future development.

Two overlay zones are associated with the *MS&R* Plan. They are the Scenic Corridor Zone and the Gateway Corridor.

The purpose of the Scenic Corridor overlay zone is to protect the city's unique visual setting and promote its economic well being through performance regulations that promote design sensitivity to the natural scenic quality. These regulations provide for the

preservation of viewsheds and views of prominent mountain ridge lines, and the retention native vegetation and natural topography along roadways. Specific requirements include building height restrictions, buffers adjacent to designated Major Streets and Routes rights-of-way, and siting criteria that relate to the protection of view corridors. Within the HAMP area Houghton Road, Valencia Road and the proposed alignments for future Poorman Road/Vail Vista Road, and Cienega Road are all designated as Scenic Routes.

The purpose of the Gateway Corridor overlay zone is to provide for the visual improvement of certain major streets and routes by implementing standards for the design and landscaping of the roadway and adjacent development. The Gateway designation is intended to create a favorable visual impression of Tucson to tourists and visitors at entry points to the city and on routes leading to major recreation attractions. This includes enhancement of the built environment along routes of important commercial development, aesthetic buffering through screening, siting, and landscaping, and improvement of the pedestrian environment along major transit routes. Within the HAMP area, the portion of Valencia Road west of Houghton Road is designated as a Gateway Route.

5. Public Transportation

The HAMP area is not currently served by public transportation. The nearest Sun Tran bus route to the area is at the Pima Community College East Campus, approximately 3 miles east of HAMP along Irvington Road. Routes 3 and 37 serve the Pima Community College with 30-minute frequencies throughout a normal weekday. There are no current plans to extend public transit service into the HAMP area in the near future.

6. Public Utilities

a. Electricity. (Figure 13)

Tucson Electric Power (TEP) operates a 138kV electrical transmission line that crosses the HAMP area from north to south, one mile east of Houghton Road. Power from this transmission network will be available to serve development in the southeastern Tucson metropolitan area.

AN 11-acre TEP electric substation is located on the southwest corner of Valencia Road and Melpomene Way, about half a mile west from the Desert Willow Estates subdivision.

b. Water. (Figure 14)

The Arizona Department of Water Resources has designated the City of Tucson as having a 100-year assured water supply.

A 24-inch water line is located along the Houghton Road right-of-way. Additionally, there are a number of water line extensions in the HAMP area.

The City of Tucson is planning to develop a storage site east of Houghton Road and north of the Union Pacific Railroad line. Due to the elevation change across the property, at least two and possibly three pressure zones are required to serve the area. One or more well sites per section will be required to supplement the central system of water supply. Each well site will be approximately 100 feet by 100 feet in area.

c. Wastewater. (Figure 15)

Pima County Wastewater Management Department owns and operates all public sewerage facilities/systems within Pima County.

There are several wastewater collection facilities in the area, including an existing 10-inch collection main extending into the area from Rita Ranch, ending at the intersection of Houghton and Rita Roads. An 8-inch main is located along Houghton Road, about half a mile south of the intersection of Houghton and Rita Roads. Sewer mains are being constructed within Civano, and are planned for extension eastward across Pantano Wash to serve development in that area.

There is also an 18" sewer trunk line that follows the alignment of Cienega Road from Houghton Road to Rancho del Lago.

d. Natural Gas. (Figure 16)

Southwest Gas provides gas lines along Houghton Road (from Drexel Road to Nogales Old Vail Connection), Valencia Road (from Houghton to Freeman Roads, and near the Old Vail alignment).

Trenching for gas is typically performed to 2'-4' depth, with the cost depending on whether the trench is in bare or paved ground.

e. Telephone and Cable. (Figure 17)

Qwest Communications provides underground and aerial telephone lines along Houghton Road, from Drexel Road to the Southern Pacific Railroad tracks. There are also underground lines along Esmond Station Road, Jumping Cholla Drive, and Poorman Road, all extending to the east from Houghton Road.

Cable television and internet services are available in the developed areas.

7. Public Facilities.

a. Parks and Recreation.

Currently, there are no public parks and facilities within the HAMP area. The 70-acre site identified as the Houghton Road Park (see **Figure 18**) with address 5600 S. Houghton Rd., is undeveloped, but it has been designated to be a Metro Park/Natural Resource Park.

Parks and facilities closest to the HAMP area are Lincoln Park and Clements Center (8280 E. Escalante Rd.) and Purple Heart Park (10050 E. Rita Rd.). While not in the HAMP area, these parks and facilities have service areas that overlap with a small area of HAMP's northwest and west sides, perhaps five (5) percent of the HAMP total area.

Table 3 depicts the capacity of each of these parks:

Table 3 Parks Serving HAMP		
	Lincoln Park	Purple Heart
Type	Metro park	Community park
Radius of service area	2.5 miles	1 mile
Park acreage	190.81 acres	36.34 acres
Recreation Center	Clements Center 16,348 square feet.	None
Accessible public restrooms	Yes	Yes
Soccer field with lights	Yes	No
Basketball court with lights	Yes	No
Volleyball court with lights	Yes	No
Softball field	With lights	Without lights
Swimming pool	Yes	Yes
Multiple use field without lights	Yes	Yes
Roller blading/skating	No	Yes
Accessible playground	Yes	Yes
Ramadas	Yes	Yes
Picnic sites	Yes	Yes
Barbecue grills	Yes	Yes
Nature trails	Yes	No
Multi-use path	Yes	No
Dusk to dawn lights	Yes	Yes
Lighted parking	Yes	Yes

b. Fire Stations.

Fire Station No. 17, at 5270 S. Harrison Road, serves the HAMP area. Just west of the HAMP area, in Rita Ranch, there is Fire Station No. 19, at 9700 E. Esmond Loop,

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serving both Rita Ranch and the HAMP area. Both fire stations have an average response time of 4.6 minutes per engine.

c. Police stations.

There are no police stations within the HAMP area. The police station closest to HAMP is the Operations Division East Police Substation (9670 E. Golf Links Rd.), on the southeast side of Golf Links and Harrison Roads.

d. Schools.

The HAMP area is within the boundaries of Vail School District, which currently provides the following capacity:

Table 4 Vail School District Facilities				
School Name and Address	Type	Total Acreage	Capacity (# of students)	Current Enrollment (# of students)
Mesquite Elementary 9455 E. Rita Rd.	K – 5	15	700	543
Desert Willow Elementary 9400 E. Esmond Loop	K – 5	15	680	716
Cottonwood Elementary 9950 E. Rees Loop	K-5	15	600	583
Desert Sky Middle School 9850 E. Rankin Loop	6 –8	26	650	712

The walking radius for elementary students is 1 mile. The walking radius for middle school students is 1.5 miles. The attached maps reflect the walking areas and attendance areas for these schools.

The public high school closest to the HAMP area is Cienega High School, located at 12901 E. Colossal Cave Road, in Vail, Arizona. Vail Unified School District granted 5 acres of land within the boundaries of the high school to Pima Community College for a Community Learning Center. The center offers both high school and college credit classes.

Vail School district indicates that a site adjacent to the east of Mesquite Ranch subdivision has been secured for an elementary school. Also, the State Land Department has agreed to auction a site about half a mile east of Houghton Road, south of the Esmond Station, for a high school site.

Pima Community College East Campus (8181 E. Irvington Rd) is located near the HAMP area, at the northeast corner of Pantano and Irvington Roads, on almost 58 acres of land.

e. Libraries.

The nearest library facility is the Miller-Golf Links branch, located at 9640 E. Golf Links Rd.